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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,241	02/17/2004	David Vilkomerson	N1104-00002	9659

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P.O. BOX 226
Fort Washington, PA 19034

EXAMINER

SOLANKI, PARIKHA

ART UNIT	PAPER NUMBER
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3737

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/780,241

Applicant(s)

VILKOMERSON, DAVID

Examiner

Parikha Solanki

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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DETAILED ACTION

Priority

1. Applicant's claim of benefit from prior-filed US provisional application 60/447,863, filed on 14 February 2003 under 35 U.S.C. 119 (e) or 35 U.S.C. 120, 121 or 365 (c) is hereby acknowledged and accepted.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Objections

3. Applicant is advised that should claims 1-11 be found allowable, claims 12-21 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).
4. Claim 12 is objected to because of the following informalities: it recites "the fluid flow," which lacks antecedent basis. Examiner assumes this was a typographical error and suggests the claim be amended to instead recite "the fluid velocity". Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-21 are directed toward methods for vector Doppler

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velocity measurement, the steps of which do not result in any kind of physical transformation nor does it provide a useful, tangible and concrete result. Examiner suggests that Applicant amend independent claims 1, 2 and 12 to include one or more steps to cure the statutory deficiencies of the instant application. For further reference regarding the definition of statutory subject matter as set forth by the USPTO, Examiner directs Applicant's attention to the USPTO published Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, published on 26 October 2005.

(http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf)

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-7, 10-17, 20-30, 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Beach (US Patent No. 5,409,010).

Beach ('010) discloses a system and method for determining the angle and magnitude of velocity vector representing blood flow, including means and steps for obtaining a plurality of Doppler frequency spectra which contain at least two peak frequencies, which are used to calculate a corrected velocity vector (col. 15 lines 2-61, col. 4 lines 25-34). Blood constitutes an ultrasound scattering fluid as claimed in the instant application. The step of calculating a corrected velocity vector constitutes minimizing the difference between the calculated and determined vector angles as claimed in the instant application. Beach ('010) also discloses means and steps for eliminating the effect of undesired vector intersections resulting from mathematical cross section, which constitute Doppler frequency errors as claimed in the instant application (col. 16 lines 14-55). Beach ('010) states that these undesired intersections are rejected in the corrected frequency spectrum, which constitutes subtracting the frequency errors as claimed in the instant application (col. 16 lines 46-49).

Additionally, Beach ('010) provides methods and elements for using multiple receive beams to acquire velocity vector information (col. 18 lines 13-20). Beach ('010) also discloses

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performing the method over a given period of time during the cardiac cycle (col. 17 line 68 – col. 18 line 1).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 8, 18 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beach (US Patent No. 5,409,010) in view of Magnin (4,671,294). Beach ('010) substantially discloses all features of the present invention as described above.

Beach ('010) is silent with respect to whether the true velocity heading is calculated by determining an averaged sum of the calculated headings. Magnin ('294) provides means and steps for acquiring multiple velocity vector angles and averaging such angles to obtain the velocity of a fluid using Doppler imaging (Abstract). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Beach ('010) to further include the steps and elements of Magnin ('294), as the method of Magnin ('294) requires simpler calculations and thus facilitates easier computation of the corrected velocity vector.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parikha Solanki whose telephone number is 571.272.3248. The examiner can normally be reached on M-F, 8 - 4:30pm.

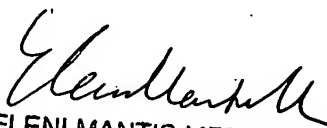
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Parikha Solanki
Examiner – Art Unit 3737



ELENI MANTIS MERCADER
SUPERVISORY PATENT EXAMINER